CLAIMS

What Is Claimed Is:

1. A method for optimizing network resources in an ATM network comprising the steps of:

(a) determining whether a channel identifier ("CID") is available on a direct virtual connection channel ("VCC") in response to a connection request;

(b) if a CID is available, then determining if bandwidth is available on the direct VCC; and

(c) if bandwidth is available on the direct VCC, then setting up an AAL2 connection on the direct VCC.

2. The method of claim 1 further comprising the step of:

(b1) setting up a new direct VCC to a destination if bandwidth is not available on the direct VCC,

wherein step (b1) is executed after step (b) and before step (c).

3. A method for optimizing network resources in an ATM network, wherein the ATM network is formed from a plurality of interconnected network nodes, the method comprising the steps of:

(a) determining whether a channel identifier ("CID") is available on an indirect virtual connection channel ("VCC");

(b) if the indirect VCC does not have an available CID, then checking all existing indirect VCCs for an available CID;

(c) if the indirect VCC has an available CID, then determining if bandwidth is available on the indirect VCC;

(d) if the indirect VCC does not have bandwidth available, then modifying the bandwidth on the indirect VCC; and

(e) if bandwidth is available on the indirect VCC, then setting up an AAL2 connection on the indirect VCC.

4. The method of claim 3 further comprising the steps of:

(d1) setting up at least one new indirect VCC to a destination if bandwidth is not

available on any indirect VCCs,

wherein step (d1) is executed after step (d) and before step (e).

5. The method of step 4, wherein the at least one new indirect VCC is setup according to a routing table.

6. A communication network comprising:

a plurality of ATM nodes;

a plurality of direct virtual connection channels ("VCC"), wherein each direct VCC connects one of the plurality of ATM nodes to a different one of the plurality of ATM nodes;

means for determining whether a channel identifier ("CID") is available on a direct VCC;

means for determining if bandwidth is available on the direct VCC; and

means for setting up an AAL2 connection on the direct VCC.

7. The communication network of claim 6, further comprising means for setting up a new direct VCC to a destination.

8. A communication network comprising:

a plurality of ATM nodes;

a plurality of indirect virtual connection channels ("VCC"), wherein each indirect VCC connects one of the plurality of ATM nodes to a different one of the plurality of ATM nodes;

means for determining whether a channel identifier ("CID") is available on an indirect VCC;

means for checking all existing indirect VCCs for an available CID;

means for determining if bandwidth is available on the indirect VCC;

means for modifying the bandwidth on the indirect VCC; and

means for setting up an AAL2 connection on the indirect VCC.

9. The communication network of claim 8, further comprising means for setting up at least one new indirect VCC.

10. An ATM node comprising:

means for connecting to at least one other ATM node, the connecting means establishing a virtual connection channel ("VCC") between the ATM node and the at least one other ATM node;

means for determining whether a channel identifier ("CID") is available on the VCC;

means for modifying the bandwidth on the VCC; and

means for setting up an AAL2 connection on the VCC.

11. The ATM node of claim 10, further comprising means for setting up at least one new indirect VCC.